



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SMR/P550588PC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA416)	
International application No. PCT/GB2004/001316	International filing date (<i>day/month/year</i>) 26.03.2004	Priority date (<i>day/month/year</i>) 04.04.2003
International Patent Classification (IPC) or both national classification and IPC A47L23/26		
Applicant MILLIKEN INDUSTRIALS LIMITED et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 3 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 15.10.2004	Date of completion of this report 23.11.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Reichhardt, O Telephone No. +49 89 2399-2485 <div style="text-align: right;">  </div>	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB2004/001316

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-31 received on 18.10.2004 with letter of 15.10.2004

Drawings, Sheets

1/2, 2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-31
	No: Claims	
Inventive step (IS)	Yes: Claims	1-31
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-31
	No: Claims	

2. Citations and explanations

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see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/GB2004/001316

1. The application relates to two inventions being not so linked as to form a single inventive concept, contrary to the requirement of Rule 13 PCT (unity):

* first invention: Claims 1 - 23;
* second invention: Claims 24 - 31.

2. Concerning claims 1 - 23:

2.1 Closest prior art: DE-U-296 03 229.

This document discloses a dust control mat having a textile layer and a backing layer, wherein the textile layer includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, said first fabric layer comprising a mesh having a number of openings, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers.

In order to prevent material from entering the spacer fabric when bonding the textile layer to the backing layer, the invention suggests that the backing layer is made of rubber and the second fabric layer has a substantially closed structure and is bonded to the rubber backing layer.

None of the available documents renders obvious such dust control mat. Consequently, the subject-matter of independent claim 1 meets the requirements of Article 33(2),(3) PCT with regard to novelty and inventive step.

2.2 Dependent claims 2 - 18 concern further embodiments of the dust control mat according to claim 1.

Consequently, the subject-matter of claims 2 - 18 meets the requirements of Article 33(2),(3) PCT.

2.3 Independent claim 19 defines a method of manufacturing a dust control mat according to claim 1.

Consequently, the subject-matter of independent claim 19 meets the requirements of Article 33(2),(3) PCT.

- 2.4 Dependent claims 20 - 23 concern further embodiments of the method according to claim 19.

Consequently, the subject-matter of claims 20 - 23 meets the requirements of Article 33(2),(3) PCT.

- 2.5 The dust control mat and the method as defined in claims 1 - 23 are industrial applicable.

Consequently, the subject-matter of claims 1 - 23 meets the requirement of Article 33(4) PCT.

3. Concerning claims 24 - 31:

- 3.1 Closest prior art: DE-U-296 03 229.

This document discloses a dust control mat having a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers.

In order to produce a poster mat, the invention suggests that the first fabric layer carries a printed image having an observable resolution of at least 75 dpi.

None of the available documents renders obvious such dust control mat.

Consequently, the subject-matter of independent claim 24 meets the requirements of Article 33(2),(3) PCT with regard to novelty and inventive step.

- 3.2 Dependent claims 25 - 27 concern further embodiments of the dust control mat according to claim 24.

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Consequently, the subject-matter of claims 25 - 27 meets the requirements of Article 33(2),(3) PCT.

- 3.3 Independent claim 28 defines a method of manufacturing a dust control mat according to claim 24.

Consequently, the subject-matter of independent claim 28 meets the requirements of Article 33(2),(3) PCT.

- 3.4 Dependent claims 29 - 31 concern further embodiments of the method according to claim 28.

Consequently, the subject-matter of claims 29 - 31 meets the requirements of Article 33(2),(3) PCT.

- 3.5 The dust control mat and the method as defined in claims 24 - 31 are industrial applicable.

Consequently, the subject-matter of claims 24 - 31 meets the requirement of Article 33(4) PCT.

CLAIMS

1. A dust control mat having a textile layer and a backing layer, wherein the textile layer includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, said first fabric layer comprising a mesh having a number of openings, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the backing layer is made of rubber and the second fabric layer has a substantially closed structure and is bonded to the rubber backing layer.
2. A dust control mat according to claim 1, in which the openings have a width of 0.5-10mm, preferably 1-4mm, more preferably 2-3mm.
3. A dust control mat according to any one of the preceding claims, in which the first fabric layer is a knitted fabric of approximately gauge 11.
4. A dust control mat according to any one of the preceding claims, in which the first fabric layer is made of a multifilament yarn, preferably polyester yarn.
5. A dust control mat according to claim 4, in which the first fabric layer is made of a yarn having a decitex of 100-200, preferably 136-167, more preferably approximately 150.
6. A dust control mat according to any one of the preceding claims, in which the second fabric layer is a knitted fabric of approximately gauge 22 or higher.
7. A dust control mat according to any one of the preceding claims, in which the second fabric layer is made of a multifilament yarn, preferably polyester yarn.
8. A dust control mat according to claim 7, in which the second fabric layer is made of a yarn having a decitex of 100-200, preferably 136-167, more preferably approximately 150.
9. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer has a thickness of 2-10mm, preferably approximately 4-6mm.

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10. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer is made from a monofilament yarn having a diameter in the range 0.04-3mm, preferably 0.05-0.3mm, more preferably 0.1-0.2mm.
11. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer is made from a synthetic monofilament yarn, preferably polyester yarn.
12. A dust control mat according to any one of the preceding claims, in which the textile layer is a warp knit fabric, preferably a Raschel knit fabric.
13. A dust control mat according to any one of the preceding claims, wherein the backing layer is made of nitrile rubber.
14. A dust control mat according to any one of the preceding claims, wherein the thickness of the rubber backing layer is from 0.5mm to 5mm, preferably 0.8mm to 3mm.
15. A dust control mat according to any one of the preceding claims, in which the rubber backing layer is vulcanised to the second fabric layer.
16. A dust control mat according to any one of the preceding claims, wherein the textile layer is printed.
17. A dust control mat according to claim 16, in which the textile layer is printed with an image having an observable resolution of at least 75dpi.
18. A dust control mat according to any one of the preceding claims, wherein the textile layer has an area of at least 0.2m², preferably at least 1m².
19. A method of manufacturing a dust control mat, the method including the steps of bonding a backing layer to a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, said first fabric layer comprising a mesh having a number of openings, wherein the backing layer is made of rubber and is bonded to the second fabric layer, and said second fabric layer has a substantially closed structure.
20. A method according to claim 19, in which the spacer fabric is a knitted fabric, preferably a warp knitted fabric, more preferably a Rachel knit fabric.

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21. A method according to claim 19 or claim 20, wherein the rubber backing layer is vulcanised to the textile layer in a heated press.
22. A method according to any one of claims 19 to 21, wherein the textile layer is printed using a sublimatic printing process.
23. A method according to claim 22 when dependent on claim 21, wherein the textile layer is printed during the backing process.
24. A dust control mat having a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer that forms the lower surface of the textile layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the first fabric layer carries a printed image having an observable resolution of at least 75dpi.
25. A dust control mat according to claim 24, in which the first fabric layer comprises a mesh having a number of openings.
26. A dust control mat according to claim 25, in which the openings have a width of 0.5-10mm, preferably 1-4mm, more preferably 2-3mm.
27. A dust control mat according to any one of claims 24 to 26, including a backing layer that is bonded to the second fabric layer.
28. A method of manufacturing a dust control mat, the method including the steps of bonding a backing layer to a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the first fabric layer is printed with an image having an observable resolution of at least 75dpi.
29. A method according to claim 28, wherein the textile layer is printed using a sublimatic printing process.
30. A method according to claim 28 or claim 29, wherein the backing layer is made of rubber and is bonded to the second fabric layer in a heated press, and the textile layer is printed during the backing process.
31. A method according to any one of claims 28 to 30, in which the first fabric layer comprises a mesh having a number of openings.